

What is claimed is:

- 5           1.     A composite wear layer comprising:  
            a) a polyethylene terephthalate wear layer; and  
            b) an organic/inorganic top coat layer.
2.     The composite wear layer of claim 1, wherein the thickness of the  
                    wear layer is between about 1 and about 20 mils.
- 10          3.     The composite wear layer of claim 1, wherein the thickness of the top  
                    coat layer is between about 2 microns and about 13 microns.
4.     The composite wear layer of claim 1, further comprising an adhesion  
                    promoter between the wear layer and the top coat layer.
5.     The composite wear layer of claim 1, wherein the top coat layer further  
15                 comprises hard particles.
6.     The composite wear layer of claim 5, wherein the hard particles are  
                    nanoparticles.
7.     The composite wear layer of claim 1, wherein the composite wear  
                    layer has performance properties that are useful as a flooring wear  
20                 layer.
8.     The composite wear layer of claim 1, wherein the wear layer  
                    comprises a  
                        polyethylene terephthalate copolymer.
9.     The composite wear layer of claim 1, wherein the organic/inorganic  
                    top coat comprises a colloidal inorganic sol.
- 25          10.    The composite wear layer of claim 1, wherein the organic/inorganic  
                    top coat layer is formed from a composition comprising a coupling  
                    agent.

5            11.        The composite wear layer of claim 10, wherein the coupling agent is a molecule comprising an organic polymerizable moiety and an inorganic polymerizable moiety.

12. The composite wear layer of claim 11, wherein the organic polymerizable moiety is selected from the group consisting of (meth)acrylate, epoxy, isocyanate, vinyl ether, allyl, vinyl, and acetylenic.

13. The composite wear layer of claim 11, wherein the inorganic polymerizable moiety is selected from the group consisting of hydrolyzable Al, Zr, Si, Ti or B alkoxides and mixtures thereof.

14. The composite wear layer of claim 10 wherein the organic/inorganic top coat composition further comprises an organic polymerizable monomer or oligomer.

15. The composite wear layer of claim 10, wherein the organic/inorganic top coat composition further comprises an inorganic polymerizable monomer.

16. The composite wear layer of claim 10, wherein the organic/inorganic top coat composition further comprises 1) an organic polymerizable monomer or oligomer, and 2) an inorganic polymerizable monomer.

17. The composite wear layer of claim 11, wherein the coupling agent comprises a reactive organic moiety that reacts with the organic polymerizable monomer, but is not capable of self polymerization.

18. The composite wear layer of claim 1, wherein the organic/inorganic top coat is cured by heat, UV radiation, electron beam radiation or combinations thereof.

19. A surface covering or surface covering component comprising the composite wear layer of claim 1.

- 5           20.       The surface covering or surface covering component of claim 19,  
              wherein the surface covering is a floor covering or floor covering  
              component.
21.       The surface covering or surface covering component of claim 20,  
              wherein the floor covering is a resilient tile.
- 10          22.       The surface covering or surface covering component of claim 20,  
              wherein the floor covering is a resilient sheet product.
23.       The surface covering or surface covering of claim 22, wherein the  
              resilient sheet product comprises a foam or foamable layer.
- 15          24.       The surface covering or surface covering component of claim 19,  
              wherein the composite wear layer further comprises an adhesion  
              promoter.
25.       The surface covering or surface covering component of claim 24,  
              wherein the adhesion promoter is between the wear layer and the top  
              coat layer.
- 20          26.       The surface covering or surface covering component of claim 24,  
              wherein the adhesion promoter is between the wear layer and the  
              flooring substrate.
27.       The surface covering or surface covering component of claim 24,  
              wherein the adhesion promoter is located on both sides of the PET  
              wear layer.
- 25          28.       The surface covering or surface covering component of claim 27,  
              wherein the adhesion promoter on one side of the PET wear layer is  
              different from the adhesion promoter on the other side.
29.       The composite wear layer of claim 1, wherein the glass transition  
30           temperature of the organic/inorganic top coat layer is above 25°C.

- 5           30.       The composite wear layer of claim 1, wherein the Mohs hardness of the top coat is greater than 1.5.
31.       The floor covering of claim 20, wherein the final product exhibits gloss retention properties of greater than 90%.
32.       The floor covering of claim 20, wherein the final product exhibits a light stability color change of less than 3 Delta b units.
- 10           33.       A process of manufacturing a floor covering or floor covering component, comprising:
  - a) laminating a PET film to a flooring substrate, and
  - b) applying, drying and curing an organic/inorganic top coat formulation to the exposed PET surface.
34.       The process of Claim 33, wherein the PET film further comprises an adhesion promoter.
35.       The process of claim 34, wherein the adhesion promoter is between the wear layer and the top coat layer.
36.       The process of claim 34, wherein the adhesion promoter is between the wear layer and the flooring substrate.
37.       The process of claim 34, wherein the adhesion promoter is located on both sides of the PET wear layer.
38.       The process of claim 37, wherein the adhesion promoter on one side of the PET wear layer is different from the adhesion promoter on the other side.
39.       The process of claim 33, wherein the PET wear layer comprises a copolymer of polyethylene terephthalate.
40.       A process of manufacturing a floor covering or floor covering component, comprising:
  - a) applying, drying and curing an organic/inorganic top coat formulation to a PET film, and

b) laminating the composite film to a flooring substrate such that the PET surface is overlying the flooring substrate, and the organic/inorganic top coat is on the exposed surface of the flooring product when installed.

41. The process of claim 40, wherein the PET film further comprises an adhesion promoter.
42. The process of claim 40, wherein the adhesion promoter is between the wear layer and the top coat.
43. The process of claim 40, wherein the adhesion promoter is between the wear layer and the flooring substrate.
44. The process of claim 40, wherein the adhesion promoter is located on both sides of the PET film.
45. The process of claim 44, wherein the adhesion promoter on one side of the PET wear layer is different from the adhesion promoter on the other side.
46. The process of claim 40, wherein the PET film comprises a copolymer of polyethylene terephthalate.
47. The surface covering or surface covering component of claim 19, wherein the PET wear layer of Claim 1 comprises a copolymer of polyethylene terephthalate.